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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,546	07/11/2003	Nathan S. Lewis	06618-892002	5173

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EXAMINER

SHAH, KAMINI S

ART UNIT PAPER NUMBER

2142

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/618,546

Applicant(s)

LEWIS ET AL.

Examiner

Kamini S. Shah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 55-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 and 55-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/1/05</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. Applicant's arguments, see remarks, filed 03/01/05, with respect to the rejection(s) of claim(s) 1-24, 55-59 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of EP 0878711.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1—24, 55-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller, P; Kangas, L; Linden, L; Hashem; S; Kouzes, R; "ELECTRONIC NOSES

AND THEIR APPLICATIONS"; IEEE Technical Applications Conference and Workshops Northcon 95; 1995; pp 116 (Hereafter referred to as Keller) in view of Mitrovics, J; Ulmer, H; Noetzel, G; Weimar, U; Gopel, W;"HYBRID MODULAR SENSOR SYSTEMS: A NEW GENERATION OF ELECTRONIC NOSES"; Proceedings of the IEEE International Symposium on Industrial Electronics; Volume 1; 1997: SS116SS121 (hereafter referred to as Mitrovics) and further in view of EP 0878711.

Regarding to claims 1, 11 and 12, Keller teaches: A sensor array system for characterization of a gas or vapor sample (e.g.; Page 116, Abstract, lines 3-7); at least one sensor which provides a detectable signal when contacted by an analyte (e.g.; Page 116, Introduction, ¶ 1, lines 10-12); A measuring apparatus in communication with at least one sensor providing a detectable signal when contacted by an analyte (e.g.; Page 117, Prototype Electronic Nose, ¶ 1, lines 1-15). However, Keller does not fully teach a transmitting data corresponding to the detectable signal to a remote location, and analyzing data received at the remote location. Mitrovics teaches a transmitting device in communication with the measuring apparatus transmitting information, corresponding to an analyte detectable signal, to a remote location (e.g.; Page SS116, ¶ II, System Overview, lines 1-19 ; Figures 1 and 2). It would have been obvious to one skilled in the art at the time of the instant invention to modify the teaching of Keller of a sensor array system for characterization of a gas or vapor sample with the teaching of Mitrovics of a transmitting device in communication with the measuring apparatus transmitting information, corresponding to an analyte detectable signal, to a remote location because a transmitting device in communication with the

measuring apparatus transmitting information to a remote location would have enhanced worker safety and increased system flexibility and application.

Regarding to claimed limitation of one sensor comprising a composite having a composite regions of a conductive material and a material compositionally different than the conductive material and wherein the at least one sensor provides a detectable signal when contacted by the at least one analyte, the Keller-Mitrovics combination does not teach such claimed feature. However, EP 0878711 discloses on page 4, lines 2-11:

“The possibility to use different arylene alkenylene oligomers for different sensors, which result in a different selectivity said sensors for a given analyte, makes the sensors according to the invention very suitable for arrays of sensors. In analogy to the electronic nose an electronic tongue can be. Again a number of sensor type come into consideration among which sensors based on conducting oligomers. Other systems that requires several sensor with different responses can also be developed using sensors according to the present sensors” (emphasis added). Also, see claim 17.

It would have been obvious to one skilled in the art at the time of the instant invention to modify the teaching of Keller of a sensor array system for characterization of a gas or vapor sample and at least one sensor is an electrically conductive sensor and the teaching of Mitrovics of a transmitting device in communication with the measuring apparatus transmitting information, corresponding to an analyte detectable signal, to a remote location with the teaching of EP 0878711 of an electrically conductive sensor comprising regions of a conductive material and a conductive

material compositionally different than the conductive material, the sensor providing an electrical path through the regions of the conductive material and the regions of the compositionally different material, and the conductivity changes upon adsorption with the analyte, because such a sensor would have been sensitive to a greater variety of chemical analytes, did not require heaters and were easier to manufacture.

Regarding claim 2, Keller teaches at least one sensor is a plurality of sensors (e.g., Page 116, Introduction, ¶ 1, lines 3-10).

Regarding claim 3, Keller teaches a tin oxide sensor as seen in figure 3.

Regarding claim 11, Keller teaches a data is a digital profile representative of the detectable signal, (e.g.; Page 117, Prototype Electronic Nose, ¶ 1, lines 8-12).

Regarding claim 13-24, Keller teaches, a sample is an environmental sample (e.g.; Page 118, Electronic Noses for Environmental Monitoring, ¶ 2, lines 1-7); an environmental sample is an air sample (e.g., Page 117, Prototype Electronic Nose, ¶ 4, lines 8-12); a sample is a biological sample (e.g.,- Page 118, Electronic Noses for Medicine, ¶ 1); a biological sample is selected from the group consisting of a breath sample, a urine sample, a vaginal sample, a feces sample, a tissue sample and a blood sample in regard to claims 16-17(e.g.; Page 118, Electronic Noses for Medicine, ¶ 1); a biological sample is a breath sample in regard to claim 18(e.g., Page 118, Electronic Noses for Medicine, ¶ 1); data is analyzed by comparing the data to a database

comprising a data profile from at least one previously-obtained detectable signal from a sample of known composition in regard to claim 19 (e.g.; Page 117, Prototype Electronic Nose, ¶ 3, lines 1-12); an analyte in the sample is identified by matching the data to the data profile of a known composition in the database in regard to claim 20 (e.g., Page 116, Introduction, ¶ 1, lines 10-16); data is analyzed by comparing the data to a database containing data profiles from a plurality of detectable signals in regard to claim 21 (e.g., Page 116, Introduction, ¶ 1, lines 10-16); each data profile in the database is associated with at least one identifier in regard to claim 22 (e.g., Page 118, Prototype Electronic Nose, ¶ 5, lines 2-6; Table 2); at least one identifier is selected from the group consisting of location, time, age, sex, disease state, temperature, sample source, sample type, organism, and ethnicity in regard to claim 23 (e.g., Page 118, Prototype Electronic Nose, ¶ 5, lines 2-6; Table 2); an analyte is identified by a best match data to a data profile in the database and identifying any identifier associated with the data profile in regard to claim 24 (e.g., Page 118, Prototype Electronic Nose, ¶ 5, lines 2-6; Table 2).

Regarding claimed compositionally different material is selected from the group consisting of polyanilines, an emeraldine salt of polyanilines, polypyrroles, polythiophenes, polyEDOTs, (see claim 17, page 13) and their derivatives; conductive material is carbon black, Ag, Au, Pd, Cu, Ni, AuCu, or Pt and a sensor comprises an insulator or plasticizer (see page 2, lines 28-33).

Regarding claims 55 and 59, claims recites the similar subject matter as claim 1, and are rejected for similar reasoning.

Regarding claim 56, EP 0878711 discloses the "nose" can be used in breath analysis. Therefore, it would have been obvious to one of the ordinary skill in the art for "the biological nose" that have been used in variety of applications including characterizing the symptoms of disease such as a health care, environmental monitoring from the orders.

Conclusion

4. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 3/01/05 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kamini S. Shah whose telephone number is 571-272-2279. The examiner can normally be reached on IFP.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B. Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Kamini S Shah
Primary Examiner
Art Unit 2142

kss